IN THE TITLE

Please amend the title from that of the International Application to “COMPOUND BODY AND METHOD FOR MANUFACTURING IT”.

IN THE SPECIFICATION:

Please amend the Specification as follows.

Page 1, after the title, insert the heading "FIELD OF THE INVENTION".

Page 1, line 6, insert the heading "BACKGROUND OF THE INVENTION".

Page 2, line 21, insert the heading "DESCRIPTION OF THE INVENTION".

Page 3, amend the paragraph beginning on line 4 as follows:

[[Claim 1 solves the]] The problem basic to the invention is solved by providing [[in that it comprises]] a composite body having a steel base element onto which is mounted a deposited heater layer, said base element being made of a precipitation hardened steel.

Page 3, amend the paragraphs beginning on line 14 and ending on page 5, line 2 as follows:

By using high-alloy steels [[as defined in claim 2]], the magnitude and the distribution of the precompression within the insulating layer may be adjusted in especially accurate and precise manner, this feature being foremost significant when[[, as defined in claim 3,]] the steel element exhibits a round or convex surface receiving the insulating layer or when[[, in the manner of claim 4,]] the steel element assumes a tubular geometry and the heater layer must be deposited on the outer wall.

The base element [[of claim 5]] offers special advantages by being a manifold or a material feed tube of a hot duct system. It is especially important in the field of hot ducts that the injection molding material being fed to a molding nest is precisely and uniformly temperature controlled as far as into the zone of the nozzles, i.e. the feed orifices. Cracks in

the heater layer would immediately entail nozzle failure and interruption of manufacture: this eventuality is effectively precluded by the composite body design of the invention.

Preferably the heater layer [[defined in claim 6]] consists of a composite layer built up of several strata and/or stratum elements and comprising [[, as defined in claim 7,]] an insulating layer deposited on the base element. [[According to claim 8, said]] The base element is a ceramic or glass-ceramic insulating layer which, depending on the deposition procedure and desired layer thickness, may consist ~~, in the manner of claim 9,~~ of two or more individual strata. [[According to claim 10, a]] A configuration of resistance elements is deposited on said insulating layer [[(claim 11)]].

Advantageously as regards manufacture, the insulating layer, furthermore the resistance elements and/or the top coat are baked dispersions, for instance thick film pastes [[(claim 12)]]. Said pastes may be deposited uniformly and in finely controlled manner to positively affect subsequent adhesion and heating operability. Alternatively the individual strata or partial strata of the heater layer may be baked-on foils [[(claim 13)]].

In [[the]] another embodiment [[mode of claim 14]], at least one temperature sensor is configured in the plane of the heater layer in order to ascertain both the temperature distribution and its genesis within the heater, i.e. inside the base element. Accordingly said temperature sensor is configured within the compound stratum without entailing sensible increase in volume. At the same time temperature changes may be detected practically at the time they take place and in very accurate manner.

~~According to claim 15, hookup~~ Hookup terminals for the resistance elements and/or the temperature sensors are integrated into the heater layer. In this manner the heater as a whole may be directly integrated into a control circuit.

Further important advantages are attained using a compound body of the invention [[defined in claim 16, namely]] when said compound body is configured in a hot duct manifold and/or a hot duct nozzle. The stratified deposition of the heater assures a firm and permanent connection to the base element wall and hence secures firm adhesion to the hot duct manifold or the hot duct nozzle. Moreover the invention most effectively precludes spalling or detachment of the heater in that the precompression in the heater layer is raised in controlled manner by precipitation hardening.

Page 5, amend the paragraph beginning on line 9 as follows:

As regards a method for manufacturing a compound body comprising a steel base element on which is deposited a heater layer, ~~independent protection is claimed according to claim 17,~~ the invention [[providing]] <u>provides</u> therein reinforcement of a pre-existing precompression in the heater element by precipitation hardening the base element.

Page 5, amend the paragraphs beginning on line 20 and ending on page 7, line 6 as follows:

[[According to claim 18, each]] <u>Each</u> stratum or stratum element of the heater layer is deposited on the base element, dried and baked/formed, and following each baking, the compound body is cooled to room temperature. In this manner all method parameters may be individually matched to the particular heater layer that, depending on the required power, may thus be optimally deposited.

[[In claim 19, moreover]] <u>Moreover</u>, the invention calls for homogenizing, i.e. solution annealing the steel alloy of the base element during baking, such a procedure being

especially advantageous regarding the method economy. A contribution to this advantageous feature is made by providing ~~also in the manner of claim 20, provided~~ the baking temperature be the same as the homogenizing, i.e. solution annealing temperature of the base element. As the individual strata or layer elements of the heater layer are being formed, stable mixed crystals (α crystals) are produced by means of said solution annealing. Therefore separately controlled manufacturing stages are no longer required.

[[The]] In another embodiment, ~~defined in claim 21 is especially advantageous, namely~~ the individual strata may be deposited using screen printing, dispensers, by immersion or spraying. Therefore the optimal procedure may be selected at each method step. All stratum paramaters such as stratum thickness, density, shape and the like may be adjusted uniformly and accurately, always attaining thereby a functional heater layer.

~~As regards the embodiment of claim 22, each~~ Each stratum or stratum element [[is]] can be baked or formed in an atmospheric ambience, the baking temperature being [[defined by claim 23 being]] between 750 and 900 °C.

~~Claim 24 calls for roughening, illustratively using sand blasting, the~~ The base element's surface can be roughened, e.g., sand blasting before the heater layer is deposited. Such a feature improves the mechanical adhesion of the insulation layer. Chemical adhesion may be optimized by cleaning and oxidizing the base element before coating [[as defined in claim 25]].

After the heater layer has been deposited, the steel alloy of the base element is aged, i.e age hardened by renewed annealing ~~in the manner of claim 26~~. Fine intermetallic precipitates are formed allowing a targeted reduction of base element volume. In this process compressive stress is generated within the heater layer deposited on the base

element making it possible to permanently balance mechanical loads applied to the base element, for instance the inner pressure loads on a material feed tube of a hot duct nozzle.

~~It is important in this respect and as defined by claim 27~~ Another important aspect of the invention is that that the age hardening temperature can be less than the baking temperature of the individual strata of the heater layer. As a result, neither forming the individual strata, i.e. of the heater layer, nor its cohesion, shall be interfered with. Furthermore the precompression in the heater layer is optimally increased without its performance parameters or functionality being degraded. The overall procedure may be controlled using simple means and therefore the costs of the method remain low.

Appropriately the age hardening procedure is carried out ~~in the manner defined by claim 28~~ in air or under a nitrogen atmosphere.